

# REDACTED VERSION OF DOCUMENT

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Contract – Long Form



## Contract (Long Form)

This is a Contract between the below named Contractor ("Contractor"), a Delaware Limited Liability Company, and Pacific Gas and Electric Company ("PG&E"), a California corporation with its headquarters located at 77 Beale Street, San Francisco, California 94105.

<b>Contractor's Legal Name:</b>	Quanta Energy Services, LLC	PG&E Contract No. 12737
<b>Contractor's Address:</b>	2800 Post Oak Blvd. STE 2600 Houston TX 77056	This Contract consists of 231 pages.

**Project Name:** Wilderness Safety Inspection Program (WSIP)

**Job Location:** Various PG&E Locations

**WORK:** Contractor shall perform the Work described in this Contract and furnish all labor, equipment, and materials necessary to complete the Work as summarized below and as more fully described in Attachment 1, Scope of Work. This is not an exclusive Contract. This Contract does not guarantee Contractor any Work nor is there any guarantee as to any volume or duration of Work.

Contractor provides electric transmission line inspection and construction services and PG&E desires that Contractor provide these Services in support of PG&E's request for services. In consideration of the recitals, terms, covenants and conditions herein, the parties agree that this Contract be established.

Continued on page 3.

**ATTACHMENTS:** Each of the following documents is attached to this Contract and incorporated herein by this reference:

Continued on page 3

**CONTRACT TERM:** This Contract is effective upon signature by both parties and expires on **June 30, 2019**.

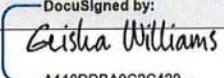
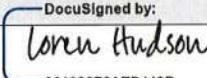
**COMPLETION:** Contractor shall commence performance hereof when directed to do so by PG&E. Work shall be completed by the completion date of **June 30, 2019**. Time is of the essence.

**INSURANCE:** Contractor shall maintain insurance in accordance with Attachment 7, Insurance Requirements of the General  
**TERMS OF PAYMENT:** In accordance with Section 8 of the General Conditions.

**CONSIDERATION:** As full consideration for satisfactory performance of the Work by Contractor, PG&E's total obligation to Contractor shall not exceed the following amount. This amount is inclusive of all taxes incurred in the performance of the Work. Any change to this amount shall only be authorized in writing by a PG&E Contract Change Order, fully executed by both PG&E and Contractor.

**TOTAL:** Two Hundred Million Dollars 0/100 (\$200,000,000) Not to Exceed Time and Materials

THE PARTIES, BY SIGNATURE OF THEIR AUTHORIZED REPRESENTATIVES, HEREBY AGREE TO THE TERMS OF THIS CONTRACT.

PACIFIC GAS AND ELECTRIC COMPANY		CONTRACTOR: QUANTA ENERGY SERVICES, LLC.	
Signature	 Geisha Williams A110DDBA0C2C420...	Signature	 Loren Hudson 68103372AEB449D...
Name	Geisha Williams	Name	Loren Hudson
Title	CEO and President	Title	Vice, President
Date	12/20/2018	Date	12/20/2018



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ADMINISTRATION			
PG&E Negotiator	Roy Green, Category Lead -Principal Angela Ramirez, Sourcing Specialist	Contractor Representative	Loren Hudson
Phone	R. Green: 415-314-9702 A. Ramirez: 916-742-9713	Phone	
Email	<a href="mailto:Roy.Green@pge.com">Roy.Green@pge.com</a> <a href="mailto:Angela.Ramirez@pge.com">Angela.Ramirez@pge.com</a>	Email	<a href="mailto:lhudson@QuantaServices.com">lhudson@QuantaServices.com</a>
Accounting Reference	Order No. 2048505		
PG&E Work Supervisor:	Ken Wells	Phone: 925-328-5613	
INVOICE INSTRUCTIONS:	<p>As described in more detail in the Invoicing section of the Terms and Conditions, Contractor shall send invoices for each payment when due, showing the Purchase Order Number (starts with "27" or "35") and the Line Item number, if applicable.</p> <p>The default submission system for invoices to PACIFIC GAS AND ELECTRIC COMPANY should be through the Taulia electronic invoicing portal, which also provides real-time invoice payment status.</p> <p>In rare cases that it is infeasible for a supplier to use this system, please send paper invoices to the address below. Invoice payment status for paper invoices can be accessed through the automated PG&amp;E Paid Help Line at (800) 756-PAID (7243) or by emailing <a href="mailto:APPaidline@pge.com">APPaidline@pge.com</a>.</p>		
	Send ORIGINAL Invoice to:	<p>PG&amp;E Accounts Payable*</p> <p>PO Box 7760 San Francisco, CA 94120-7760</p>	
	Send COPY of Invoice to:	<p>Ken Wells 6111 Bollinger Canyon Rd San Ramon CA 94583925-328-5613</p>	

INTERNAL PG&E USE ONLY			
Distribution Date			
Distribution of Copies	<input type="checkbox"/> ARIBA Contracts ("CXXXX" series): Buyer uploads an executed copy in Ariba.	<input type="checkbox"/> Contractor (Signed Original Copy)	
	<input type="checkbox"/> Work Supervisor	<input type="checkbox"/> Manager	
	<input type="checkbox"/> Invoice Approver	<input type="checkbox"/> Supervisor	
	<input type="checkbox"/> V.P.	<input type="checkbox"/> Sourcing/ Purchasing	
	<input type="checkbox"/> Director	<input type="checkbox"/> Law	



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Attachment Listing:

Attachment 1: Statement of Work, Pages 1 through 5

Attachment 2: MSA General Conditions, Pages 1 through 86

Attachment 3 Contract Specific General Condition Terms, Pages 1 through 7

Attachment 4: Pricing, Pages 1 through 9

Attachment 5, Safety Standard, Pages 1 through 6

Attachment 6, Supplier Diversity, Pages 1 through 2

Attachment 7, Insurance Requirements, Pages 1 though 4

Attachment 8 Electric Transmission Overhead and Underground Specification, Pages 1 through 108

Attachment 9 Exhibit 1A Prime Supplier Subsidiary Plan, Page 1 of 1



## SCOPE OF WORK

### 1.0 WORK DESCRIPTION

#### 1.1. Overview:

1.1.1. PG&E has an urgent need to inspect its entire electric transmission system (towers and poles) to evaluate the strength, durability and quality of PG&E's towers and poles. Under the direction of PG&E, Contractor shall execute transmission tower and pole inspections in the quantities and locations determined by PG&E. Contractor's inspection services scope shall be limited to the collection of data identified by PG&E. Repairs will be under the direction of PG&E and in accordance with all applicable requirements.

#### 1.2. Credential Qualification:

1.2.1. Contractor shall provide only Qualified Electrical Workers ("QEW") (per Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart S, Journeymen Linemen, complement crew members and project support personnel (collectively, "Workers") who are well-qualified, having the qualities and capabilities required by law and training to efficiently and effectively perform this Work. Any Workers not meeting these minimum requirements will be rejected at no cost to PG&E. For the avoidance of doubt, this provision addresses only the assignment of personnel to this Work; it does not require the Contractor to terminate the employment of any individual replaced hereunder, nor does PG&E endorse or approve, either expressly or impliedly, Contractor's termination of any such individual.

1.2.2. Contractor shall present personal information and craft labor qualifications to PG&E's representative for validation of IBEW labor qualifications.

#### 1.3. Orientation and Training:

1.3.1. Each Worker shall first attend orientation consisting of a 1-day in person training in San Ramon, California.

1.3.2. Training will orient Workers to the expected use of electronic recordkeeping tools to be utilized for asset inspections, such as the applications Inspect® and ProntoForms.

1.3.3. Upon successful credential qualification and training, PG&E will issue each Worker a hand-held device for recording inspection results. The devices are PG&E company assets (including iPhone and iPad and Garmin GPS). Workers will also receive a PG&E identification badge, and will be released to field operations utilizing the Automation of Reports and Consolidation Orders System ("ARCOS").

1.3.4. Each Worker shall initiate timekeeping check-in via the ARCOS application.

1.3.5. Contractor's Worker found to not be performing Inspection Services in accordance with this Contract shall be removed upon request by PG&E. Contractor shall notify the PG&E Representative in writing immediately (but no later than 24 hours following discovery) if Contractor discovers that any of its Workers has or may have engaged in any falsification or misrepresentation concerning the Work, including but not limited to falsely documenting Work as performed when it was not in fact performed, or submitting false documentation that results in fraudulent billing to PG&E. Contractor's notice shall describe the action Contractor has taken regarding this employee as well as the action Contractor has taken or will take to ensure that other employees will not falsify documentation in the future. Contractor shall reperform affected inspections at no cost to PG&E.

1.3.6. Contractor shall accept PG&E's inspection and inspection tool modifications from PG&E's quality assurance and quality control results. Calibration of all tools shall be performed by PG&E.

#### 1.4. Inspection Work:

1.4.1. Contractor shall execute the transmission asset inspections under PG&E's direction and guidance.

1.4.2. Contractor shall perform daily safety briefings and tailboards as necessary.

1.4.3. PG&E shall provide Contractor an established inspection guide, inspection process, and training and orientation; it being the expressed intent and understanding of the parties that Contractor inspect only what is (i) above grade, (ii) readily visible to the naked eye (including through the use of drones), (iii) specifically requested to be inspected by PG&E, and provided that such inspections be made in accordance with the specifications and criteria provided by PG&E.



- 1.4.4. Contractor shall only perform inspections of structures identified by PG&E, in accordance with the inspection criteria developed and required by PG&E. Workers made available by Contractor to perform the inspections shall be trained by PG&E as described above and shall only be permitted to perform Inspection Work (as requested by PG&E) if PG&E is first satisfied, in its sole discretion, with each Worker's competence and ability to satisfy the inspection requirements.
- 1.4.5. Contractor inspection work scope shall be limited to the collection of data (including photographs and condition assessments) requested by PG&E.
- 1.4.6. Receive their daily work assignments via direction from PG&E field leadership.
- 1.4.7. Contractor shall execute and record field inspections and capture photographic documentation as directed by PG&E, and in accordance with orientation and utilizing a hand-held device (PG&E iPhone and or iPad assets), and applications ProntoForms.
- 1.4.8. Contractor shall initiate SAP Line Corrective Notifications for discrepancies identified during inspections utilizing PG&E assets (iPhone and or iPad) and applications, Inspect Application.
- 1.4.9. Contractor shall submit completed inspections and notifications to PG&E on a daily basis
- 1.4.10. Contractor shall initiate timekeeping check-in and check-out via ARCOS.
- 1.4.11 PG&E shall be responsible for the interpretation, correction, and validation of the data provided by the Contractor. Any incomplete inspection report provided by Contractor to PG&E shall be promptly referred back to Contractor. Failure to notify Contractor of incomplete or insufficient inspections reports within 30 days of receipt by PG&E shall be deemed tacit approval of such report by PG&E.
- 1.4.12 PG&E shall be responsible to provide access to towers, poles, equipment, and specific components ("Structures") that PG&E directs Contractor to inspect. Failure by PG&E to provide such access, after notice and as reasonably determined by Contractor, shall relieve Contractor of responsibility to inspect such Structure; provided however that Contractor shall enter an inspection report into the system stating that access was not provided.

#### 1.5 Repair Services:

- 1.5.1 PG&E shall be responsible to identify which repairs are needed and the methodology and schedule for performing such repairs. Repair services are subject to the same access obligations as set forth above under the heading "Inspection Services".
- 1.5.2 PG&E shall identify the detailed scope and timing of repairs through the deployment of written Contractor Work Packages.
- 1.5.3 PG&E shall reimburse Contractor for any training required, to execute the Inspection Services and Repair Services, included with the 1-day orientation and training and other training PG&E deems necessary for Contractor to complete the Work performed under this Contract.
- 1.5.4 Acceptance Criteria. PG&E is responsible for promptly inspecting all Repair Services performed by Contractor. Failure to notify Contractor of incomplete, faulty, or otherwise unacceptable Repair Services within 30 days of receipt by PG&E of notice of completion of such relevant Services shall be deemed tacit approval of such Services by PG&E.

#### 1.6 Work Hours:

- 1.6.1 From the time of mobilization PG&E shall reimburse Contractor's IBEW signatory personnel Work seven days each week; twelve hours each day (7days/12 hours each day). Contractor's personnel not signatory to IBEW shall be reimbursed seven days each week; eight hours each day (7days/8 hours each day).
- 1.6.2 From the time of mobilization PG&E shall reimburse Contractor for Unutilized available equipment (equipment not mobilized to perform inspections) at a maximum of 40 hours per week. Equipment that is Utilized by Contractor crews in the performance of work shall be billed in alignment with hours worked by Contractors crew (e.g. Crew work 84 hours – equipment utilized by that crew is billed for 84 hours). For purposes of clarity, equipment shall not be double billed by the Contractor (e.g. Unutilized rate + Utilized rate for same piece). Contractor shall have equipment readily available to rotate between Repair and Inspection services. This is meant to drive project efficiency and allow the Contractor Crews to be prepared for contingencies that might develop under the Program.



#### 1.7 PG&E Personnel:

- 1.7.1 The designated PG&E employee(s) to provide clarification and general direction for the Work identified herein shall be assigned by PG&E and identified in writing to Contractor.

### 2.0 CONTRACTOR REQUIREMENTS

Contractor shall perform all Work and submit required deliverables as described herein.

#### 2.1 Personnel

Contractor's designated key personnel: Jim Stapp and James Pratt for the Work shall be familiar with PG&E's processes and procedures and shall possess the technical and functional skills required to efficiently perform the Work described within. PG&E's Project Lead shall have sole discretion regarding the competency of Contractor personnel relating to the requirements of this work.

### 3.0 PG&E PROVISIONS AND RESPONSIBILITIES

PG&E shall provide or be responsible to provide the following:

- 3.1. Timely access to the resources, information, systems, calibrated tools, and system resources necessary to perform the Work described herein and submit deliverables.
- 3.2. Contact information of all relevant PG&E personnel, including designated Project Lead(s).
- 3.3. Templates and procedures for project plan, reports, checklists and other applicable deliverables.
- 3.4. Support in interfacing with other PG&E groups and PG&E contractors, as applicable.
- 3.5. Feedback/comments on project deliverables to Contractor, as required.

### 4.0 CONTRACT TERM

- 4.1. All Work shall be completed, and all required deliverables submitted on or before June 30, 2019.

#### 4.2. Completion Criteria

- 4.2.1. Contractor's completion of the Work described herein shall be determined based on the submittal of all required deliverables to the PG&E's Project Lead and subsequent acceptance of deliverables by the same PG&E's Project Lead, Ken Wells. Confirmation of contract completion shall be formalized through written correspondence between the Contractor and the PG&E's Project Lead or designee, or as designated in Sections 1.4.13 and 1.5.4, as applicable.

### 5.0 ASSUMPTIONS

Contract scope and pricing has been established for the Work described herein under the following assumptions:

- 5.1. A properly executed Change Order is required to increase the value of this Contract for any reason, per the General Conditions under this Contract.
- 5.2. Any changes to increase the Contract term, scope or total value shall require a properly executed Change Order document.

### 6.0 WORK PERFORMANCE / DETAILS & SPECIFICATIONS

- 6.1. Contractor shall perform all Work as directed by PG&E's Project Lead, in accordance with the requirements and specifications of this Contract and PG&E's appropriate technical documentation, including all incorporations and references within, unless specifically stated otherwise herein.

### 7.0 PRICING AND INVOICING

- 7.1. Pricing for the Work described herein shall be Time and Expense (T/E), Not-To-Exceed (NTE) amount of Two Hundred Million Dollars and 0/100 cents (\$200,000,000.00) and includes all labor, materials and expenses, based on time and materials per the rates specified under this Contract.

#### 7.2. Invoices

Contractor shall submit invoices per the Invoice requirements specified in this Contract.

- 7.2.1. Invoices shall be submitted for actual Work performed and completed and shall clearly detail work performed. Failure to properly submit invoices may delay payment.
- 7.2.2. Invoices shall clearly specify the title/classification and rate of the person performing the work, the month, day and hour(s), in which the Work was performed along with a description of work performed. Additionally, a signed receipt of the completed deliverable, if any, shall be attached.
- 7.2.3. Contractor's travel expenses shall be reimbursed for actual costs incurred and as specified under this Contract. Contractor must submit receipts for all actual costs incurred in order to receive reimbursement.



- 7.2.4. Contractor shall provide copies of all itemized receipts with invoices. Receipts will be verified by PG&E prior to reimbursement of expenses.
- 7.2.5. The final invoice shall be marked "FINAL" and must be received by PG&E within sixty (60) calendar days after completion of the Work. PG&E shall not be liable for payment of any late invoices that are received by PG&E beyond such sixty (60) day period.

### 7.3. Acceptance

- 7.3.1. Upon receipt of invoices, PG&E Project Lead shall confirm that Contractor has provided satisfactory performance and completion of Work as required.

## 8.0 GENERAL SAFETY

PG&E expects Contractor to act in accordance with all general safety guidelines and precautions at all times and under this Contract while performing Work described herein. The following sections identify additional safety requirements applicable to Contractor when Contractor is performing Work at locations in an energized facility or near electrically energized equipment or lines.

### 8.1. Onsite Safety Requirements

- 8.1.1. This section contains general onsite safety requirements for an electrically energized facility or area near electrically energized equipment or lines. It is intended to capture main safety requirements and raise awareness thereof. Contractor shall not consider this section to be all encompassing of safety requirements but shall adhere to all requirements as detailed under this Contract.

### 8.2. Site Safety Briefing

- 8.2.1. A site safety briefing shall be conducted by the PG&E site representative for each site prior to commencing work.

### 8.3. Electrically Energized Facility

- 8.3.1. Work to be performed by Contractor is in an electrically energized facility or an area containing potentially electrically energized lines, which warrants extreme caution while working around electrical equipment and power lines. Contractor shall take reasonable and customary precautions, in accordance with industry practices, to protect its employees and subcontractors from contact with energized equipment and prevent damage to existing site facilities, lines, and property. Contractor shall not enter an electrically energized facility or begin working in an electrically energized line area without an authorized PG&E representative's continual presence to observe all phases of Work.

### 8.4. Personal Protective Equipment and Clothing

- 8.4.1. All persons shall wear safety glasses, hard hats and other personal protective equipment necessary to perform Work safely. Frontal eye protection and hard hats shall be worn at all times. Frontal eye protection includes either safety glasses or prescription eyewear and must meet ANSI Z87.1-1989 standard.

- 8.4.2. All persons shall wear suitable clothing at all times to minimize danger when they are exposed to live electrical equipment or lines, moving machinery, hot surfaces or substances, potentially injurious substances, rough or sharp surfaces, open flames, explosions, etc. Rubber sole leather shoes shall be worn when entering PG&E powerhouses or switch yards.

### 8.5. Fall Protection

- 8.5.1. Contractor shall provide and use Cal OSHA approved harnesses and lanyards, lifelines or other adequate protection as required when working in elevated positions.

### 8.6. Clearances

- 8.6.1. If required Contractor shall perform Work within clearance points determined and tagged by the PG&E site representative. Upon arrival of Contractor onsite, PG&E will lock out/tag out the unit controls.

### 8.7. Contractor Safety Program

- 8.7.1. Contractor represents and warrants that it will perform all applicable Work, and cause all Subcontractors to perform all applicable Work, in compliance with PG&E's Contractor Safety Program Standard Contract Requirements, as may be modified from time to time. The Contractor Safety Program Standard Contract Requirements can be located and downloaded at: [www.pge.com/contractorsafety](http://www.pge.com/contractorsafety) and are hereby incorporated by reference into this Contract. Contractor's failure to comply with the Contractor Safety Program Standard Contract Requirements shall be immediate grounds for termination for cause under this Contract. Notwithstanding the above, Contractor is the "controlling employer" as defined under Cal OSHA and will remain responsible for all Cal OSHA fines and liability arising from violation of the Contractor Safety Program Standard Contract Requirements and applicable law, as it relates to employee safety."



8.7.2. Any material changes to PG&E's Contractor Safety Program Standard Contract Requirements that have a material impact on the Work, as determined by Contractor, shall entitle Contractor to seek a change order.

**8.8. Flame Retardant Clothing**

8.8.1. All Contractor personnel shall wear flame retardant clothing as defined by the American Society for Testing and Materials standard TM F1506-02a, "Standard Performance Specification for Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards" under any of the following conditions:

8.8.1.1. The Contractor's personnel are subject to contact with energized circuit parts operating at more than 600 volts,

8.8.1.2. The Contractor personnel's clothing could be ignited by flammable material in the work area that could be ignited by an electric arc, or

8.8.1.3. The Contractor personnel's clothing could be ignited by molten metal or electric arcs from faulted conductors in the work area.

8.8.2. Contractor shall ensure that Contractor's personnel wear flame retardant clothing that has an arc rating greater than or equal to the available heat energy and ensure that personnel wear clothing that could not melt or ignite and continue to burn in the presence of electric arcs to which personnel could be exposed as required by the National Electric Safety Code (NESC-IEEE C2-2007). All garments shall have tags visible from the outside that clearly identifies the garment as Flame Resistant (FR) and clearly indicates the arc rating (HRC category) of the garment. All garments shall have a minimum rating of HRC 2.

8.8.3. All Contractor's personnel and subcontractors requiring access to PG&E Transmission or Distribution Line facilities, Substation facilities or PG&E Power Generation Facilities shall be required, at a minimum, to wear flame retardant clothing (long sleeve shirts, long pants or coverall as required) rated HRC 2 with a minimum rating of 8 cal/cm<sup>2</sup> for personal protection as required by the PG&E Arc Flash Hazard Control Procedure (SHC 237).

8.8.4. The Contractor shall take all precautions necessary to protect employees, public, and property from exposure to this risk. At a minimum, Contractor must comply with all federal, state, local, or any other regulations that apply to this Work.

**END OF SCOPE OF WORK**

# Attachment 1

## General Conditions



***Pacific Gas and  
Electric Company***<sup>®</sup>

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## 1. DEFINITIONS

Capitalized terms include the defined terms set forth below as well as titles of Attachments to the Master Service Agreement ("MSA") and Exhibits to the Contract Work Authorization ("CWA").

**1.1 "Adverse Weather"** is winds of 60 m.p.h. or more, or unusual precipitation (beyond 21 inches per year) that prevent or substantially impedes the construction work from proceeding resulting in a delay in the Contract Time beyond the designated number of adverse weather days included in the approved Schedule included in the CWA per a 12 month period. Construction work is substantially impeded if more than half of a planned and otherwise available workday is lost except to the extent the delay is also caused by any fault, neglect, act, or omission of the Contractor, its engineers, consultants, subcontractors (inclusive of all tiers), suppliers, or any of their respective employees or entities in direct privity of contract for whom they may be liable.

**1.2 "Agreed Program"** includes the data, criteria, programming, documentation, and requirements developed by Contractor and PG&E, with assistance and input from other Project Team Members (as applicable) for each Capital Improvement Project that is acceptable to PG&E and meets acceptable industry standards and is sufficient to accommodate PG&E's goals and functional requirements.

**1.3 "Amendment"** is a document executed by PG&E and Contractor amending the terms and/or conditions of the MSA or a CWA but not adjustments in Contract Price or Contract Time.

**1.4 "Applicable Law"** includes all local, state, and federal laws, rules, regulations, ordinances, building code or other codes, statutes, or regulations, or lawful orders of Governmental Authorities that are relevant to proper and safe performance of the Services and Work, as well as occupancy and operation of the Capital Improvement Project including, but not limited to, all applicable Federal Energy Regulatory Commission, North American Electric Reliability Corporation, California Independent System Operator, United States Department of Transportation, and California Public Utilities Commission regulations, rules, orders, decisions, and requirements..

**1.5 "Approved Issuer"** is a United States commercial bank or a United States branch of a foreign commercial bank acceptable to PG&E. In either case, the issuing bank must have a credit rating of at least A- with a stable designation from S&P and A3 from Moody's with a stable designation. In the case of a United States branch of a foreign bank, PG&E may: a) impose restrictions, limits, and additional requirements regarding any security instrument issued; and b) require: (i) that a U.S. commercial bank with the credit rating identified herein act as a "confirming bank" (as defined in Article 8 of the ICC Uniform Customs and Practice for Documentary Credits 2007 Revision (aka "UCP 600"), and (ii) that additional terms and conditions be included in any security instrument issued.

**1.6 "Bidder" or "Bidders"** includes all engineering, technical and professional firms or construction companies that respond to the Request for Proposal.

**1.7 "Budget"** is the amount PG&E has authorized for performance of the Work or Service.

**1.8 "Building Information Model" or "BIM"** is a parametric, computable representation of a Capital Improvement Project design developed by the Engineer of Record, its consultants, and any design-build subcontractors, and includes construction details developed by the Contractor and its subcontractors (inclusive of all tiers). As used in the Master Services Agreement and CWA, references to BIM or the Model include the primary design model or models and all linked, related, affiliated, or subsidiary models developed for design, estimating, detailing, fabrication, or construction of a Capital Improvement Project, or any portion or element of the Capital Improvement Project. The portions of the Model prepared by the Engineer of Record, its consultants, and design-build subcontractors under the responsible control of a licensed design professional are Construction Documents. The portions of the Model prepared by the Contractor or design-assist subcontractors to illustrate means and methods for constructing, fabricating, or installing portions of the construction work are Submittals, which are not Construction Documents. The Model will include more construction details than shown in the Drawings but may not deviate from the Government Authority approved two-dimensional ("2-D") Drawings and Specifications or the approved permit set without obtaining subsequent approval from PG&E and the Governmental Authority.

**1.9 "Capital Improvement Project"** is the Work for a gas and/or electric project specifically described in the CWA.

**1.10 "Change Order"** is a written order signed by both Parties authorizing additional Services or Work, modifies the Contract Price, and/or grants an extension or reduction in the Contract Time.

**1.11 "Change Order Request" or "COR"** is a written request to PG&E for Change Order, which sets forth the nature of the change, the reason for the change, and the effect, if any, on the Contract Price, Contract Time, or both.

**1.12 "Claim"** is an unresolved dispute between PG&E and Contractor, which may include other Project Team Members through joinder, involving monetary or equitable relief that arises out of or relates to a Capital Improvement Project or Projects, the Contract Documents, performance of the Services or Work, or third party claims for payment, personal injury or property damage, infringement of intellectual property rights, or violation of Applicable Law.

**1.13 "Construction Documents"** include the 2-D Drawings and Specifications developed and assembled by the Engineer of Record, its consultants, and design-build subcontractors that are approved for construction by Governmental Authorities, together with those parts of the Model described as Construction Documents in the definition of Building Information Model above, any clarifications through responses to requests for information, design sketches, or other such clarifications issued post-permit, and any modifications through executed Change Orders.

**1.14 "Construction Manager"** is the entity retained by PG&E to manage and administrate the construction process.

**1.15 "Contract Documents"** include the MSA (inclusive of the General Conditions, Special Conditions, and other Attachments) and the CWA (inclusive of all Exhibits) including all Construction Documents, Schedules, and any subsequent Change Orders or Amendments.

**1.16 "Contract Price"** is the total cost to PG&E for Contractor's performance of the Services or Work based on the compensation model terms and conditions set forth in the CWA and any approved Change Orders.

**1.17 "Contract Time"** is either the time allotted in the CWA for performance of a certain portion of the Services (if Contractor is not performing all Services), or the time allotted in the CWA to achieve Substantial Completion of the Work, subject to extensions of time through executed Change Order.

**1.18 "Contract Work Authorization" or "CWA"** is the executed document authorizing a particular Capital Improvement Project or Projects that are tied to the MSA and incorporating Capital Improvement Project or Projects specific information, terms, conditions, and Exhibits.

**1.19 "Contractor"** is the entity entering into a MSA with PG&E.

**1.20 "Contractor Parent Guarantor"** is Contractor's corporate parent acceptable to PG&E.

**1.21 "Drawings"** means the 2-dimensional graphic illustrating a Capital Improvement Project design, inclusive of elevations, plan views, dimensions, and details of the construction work.

**1.22 "Effective Date"** is the date that the MSA or CWA (as applicable) are deemed executed by the Parties.

**1.23 "Engineer of Record"** is the California State licensed engineer who is responsible for designing a Capital Improvement Project or Projects. With respect to design-build portions of the Work, the licensed engineer who provides the design and stamps and seals the Drawings, calculations and other design documentation is the Engineer of Record with respect to that portion of the Work.

**1.24 "Fee"** is the amount of profit paid to Contractor for Services or Work rendered per the specific compensation model terms and conditions set forth in the CWA, and in accordance with Article 6 of the MSA (as applicable).

**1.25 "Final Completion"** is the date after Substantial Completion when all Work has been finally completed in accordance with the Contract Documents; all Punch List items have been completed and accepted by the Parties as well as the inspector of record (if applicable); all equipment and systems have been tested and commissioned; all close-out documentation and spare parts required under the Contract Documents have been transmitted to PG&E; PG&E's personnel have received the training sessions regarding operation of all systems as required under the Specifications; a permanent certificate of occupancy has been issued by applicable Governmental Authorities; and the facility is ready for PG&E's utilization and operation.

**1.26 "Force Majeure"** means fire, flood, named storm and other natural disasters; civil disobedience; an act of terror; national emergency; war; unavoidable catastrophic casualties beyond the control of, and not due to any act or omission of, any Project Team Member; or an action or restraint by a Governmental Authority that is beyond the control of the Contractor and materially impedes performance of the construction work, and is not due to an act or omission of Contractor, its employees, engineers, consultants, subcontractors (inclusive

of all tiers), suppliers, or anyone for whom any of them may be liable. Labor disputes and strikes are not a Force Majeure event.

**1.27 "Good Engineering and Construction Practices"** means those methods, techniques, standards and practices which, at the time they are to be employed and in light of the circumstances known or reasonably believed to exist at such time, are generally recognized and accepted as good design, engineering, equipping, installation, construction, commissioning and testing practices for the Work of a Capital Improvement Project for gas and electric transmission and distribution industry as practiced in California.

**1.28 "Governmental Authority" or "Governmental Authorities"** means any and all federal, state, county, or municipal boards, departments, courts, offices, or agencies that have jurisdiction over the Projects or a Capital Improvement Project.

**1.29 "Hazardous Materials"** means any substance, product, waste, or other material of any nature that is or becomes listed, regulated or addressed under one or more of the following environmental laws: (1) CERCLA, (2) Hazardous Materials Transportation Act, (3) RCRA, (4) the Clean Water Act, (5) the Toxic Substance Control Act, (6) HSAA, (7) the California Porter-Cologne Water Quality Control Act, (8) the California Hazardous Waste Management Act, (9) the California Safe Drinking Water Act, (10) the California Waste Management Act, and (11) any other federal or state law or local ordinance concerning hazardous, toxic, or dangerous substances, wastes, or materials.

**1.30 "Lean Project Delivery Methods" or "LEAN"** are defined by the Lean Construction Institute and include, but are not limited to, the concepts in Article 15, and any Lean Program prepared by Contractor and approved by PG&E for a Capital Improvement Project or Projects.

**1.31 "Master Service Agreement" or "MSA"** is the written contract between PG&E and Contractor inclusive of all Attachments as indicated in the MSA.

**1.32 "Mechanical Completion"** means that the Work has been properly completed, tested, calibrated, and commissioned in accordance with the Construction Documents so that the Capital Improvement Project is ready for safe, efficient and reliable operation by PG&E.

**1.33 "Pacific Gas and Electric Company" or "PG&E"** is the owner of all Capital Improvement Projects and related facilities, which generally include gas or electric transmission or distribution systems.

**1.34 "Party"** refers to either PG&E or Contractor and **"Parties"** refers to both PG&E and Contractor.

**1.35 "Performance Tests"** are actions taken as described in Section 4.10 and the Contract Documents to verify the performance of the Capital Improvement Project, or Projects, including whether the performance guarantees have been achieved.

**1.36 "PG&E Caused Delay"** is a delay caused solely by PG&E's failure to perform one or more of its obligations under the MSA and/or CWA that materially impacts Contractor's ability to timely perform its obligations under the Contract Documents.

**1.37 "PG&E Generated Scope Changes"** are changes directed by PG&E to the scope of Services or Work described in the Contract Documents that impact the Contract Price or Schedule and are not: (i) reasonably inferable from the Agreed Program or as a result of a design error or omission (if Contractor is performing design and construction services); or (ii) not reasonably inferable from the Construction Documents (if Contractor is only performing construction work).

**1.38 "Project Team Members"** include PG&E, Contractor, and their respective consultants, engineers, contractors, subcontractor (inclusive of all tiers) (inclusive of all tiers)s, and vendors.

**1.39 "Projects"** means more than one Capital Improvement Project.

**1.40 "Punch List"** is a comprehensive list prepared by PG&E, Contractor, Engineer, and the inspector of record (if any) itemizing components, equipment, or other elements to either be completed or corrected before Substantial Completion or Final Completion, as applicable.

**1.41 "Record Model"** is a version, or versions, of the BIM that match the Construction Documents included in the permit set, or phases of the permit set.

**1.42 "Resource-Loaded Work Plan" or "RLWP"** is the cost loaded staffing plan prepared by the Contractor identifying its proposed staff members and allocating each staff member's proposed time and billable rates needed to perform the Services as more particularly defined in the CWA.

**1.43 "Schedule"** is Contractor's approved schedule for the Services or Work as defined by the CWA that identifies the sequence and timing for the Work or Services and includes all milestone dates.

**1.44 "Schedule of Values"** is a document that allocates the Contract Price over the duration of the Schedule that will be used during the monthly application for payment to track actual Services or Work performed, percentages complete, and to assist in determining whether Services or Work are progressing as planned.

**1.45 "Services"** includes development, planning, program management, procurement, design and construction, and contract administration services related to either a Capital Improvement Project or Projects. The Services will be particularly defined in the CWA.

**1.46 "Specifications"** are the written requirements for materials, equipment, systems, standards, execution, performance, and workmanship for the Work of a Capital Improvement Project or Projects. The Specifications will be included in the CWA.

**1.47 "Submittal"** includes shop drawings, product data, samples, and similar documentation required by the Specifications or other Construction Documents for a Capital Improvement Project.

**1.48 "Substantial Completion"** means, for each Capital Improvement Project (i) completion of the Work for a Capital Improvement Project in accordance with the permitted Construction Documents; (ii) all systems included in the Work have achieved Mechanical Completion and all Performance Tests have been successfully completed, and (iii) receipt of

approval by those Governmental Authorities having jurisdiction over inspections and substantial completion of the Capital Improvement Project certifying that the Capital Improvement Project is capable of being placed in service.

**1.49 "Target Cost"** will be used only for Work procured under the target cost model as described in Section 6.3.5. The Target Cost is the agreed cost of the Work based on those reimbursable expenses as defined in Section 6.4.7, established by the Parties either at the end of the Planning Phase as described in Section 4.2 or upon approval of schematic design developed in accordance with Section 4.6, as determined by the Parties. The Target Cost does not include profit placed at risk. The Target Cost measures whether a Capital Improvement Project or Projects meet PG&E's financial expectations and will be the threshold against which the final actual cost of the Work is compared upon Final Completion to determine the amount of profit earned, if any.

**1.50 "Test Notice"** is written notice from Contractor designating the date(s) for commencement of performance tests on a Capital Improvement Project or Projects.

**1.51 "Target Value Design"** is a forward focused design process that requires project values, cost, schedule, constructability, Budget and PG&E's scheduling requirements to be basic components of the design criteria to drive innovation in designing a Capital Improvement Project or Projects that will provide optimum value to PG&E. Target Value Design uses constructability and rapid cost information from Contractor and its key subcontractors (if retained) before design decisions are made to allow the design to progress within the Capital Improvement Project Budget or Projects Budget, as well as PG&E's schedule, engineering, and other design requirements.

**1.52 "Unforeseen and Differing Site Condition"** means discovery of historical or archeological or cultural finds, rare, endangered or threatened species, Hazardous Materials, underground obstructions, underground utilities, geotechnical or soils issues or defects, faults, anomalies, or unknown features or conditions with respect to the Capital Improvement Project that were unknown by Contractor before execution of the CWA or commencement of the construction work, whichever is later, and could not have been reasonably discovered through diligent review of all documentation disclosed in writing to Contractor relating to the particular Capital Improvement Project. To the extent that Contractor is also performing development, planning, or program management, Contractor will only be entitled to relief for an Unforeseen and Differing Site Condition provided that such condition could not have been discovered through diligent planning and reasonable investigative services related to development of the Capital Improvement Project, including but not limited to potholing, hazardous material survey, environmental investigation reports, or geotechnical services.

**1.53 "Work"** means all labor, materials, equipment, appurtenances, and services necessary for Contractor and its consultants and subcontractors (inclusive of all tiers) to properly design, construct, test, and commission a Capital Improvement Project or Projects.

## 2. RELATIONSHIP OF THE PARTIES

**2.1 Independent Contractor.** The Contractor's relationship with PG&E is that of an independent contractor whose involvement in a Capital Improvement Project is to act solely in the capacity of a California state licensed engineering or contractor performing the Services or Work as described in the CWA and not as an agent, fiduciary, partner, member of, subsidiary of, or otherwise affiliated with PG&E. Contractor acknowledges that it is responsible for any acts,

errors, or omissions of Contractor's principals, employees, agents, and/or any other parties, either directly or indirectly, in privity of contract with Contractor including, but not limited to, engineers, consultants, subcontractors (inclusive of all tiers), suppliers, and their respective agents and employees, and other persons performing any portion of the Services or Work on behalf of Contractor.

**2.2 Subcontracting.** Contractor may not subcontract any portion of the Services or Work absent PG&E's prior written approval in each instance. To the extent PG&E authorizes Contractor to subcontract portions of the Services or Work, all consulting agreements and subcontracts, including supply agreements, must be in writing, must be approved by PG&E prior to execution, and must bind each engineer, consultant, subcontractor (inclusive of all tiers), and supplier to the Contract Documents and require that each subcontracting party assume toward Contractor all obligations and responsibilities that Contractor assumes toward PG&E under the Contract Documents with respect to the portion of the Services or Work performed by the party. Contractor guarantees the performance of all consultants, subcontractors (inclusive of all tiers) and suppliers performing any part of Contractor's responsibilities and shall be solely responsible for any acts or omissions of consultants, subcontractors (inclusive of all tiers) and suppliers while rendering Services or Work to PG&E.

**2.3 Standard of Care.** Contractor will perform all Services and Work using its best skill and attention and in a timely, workman-like manner consistent with the degree of care and skill customarily exercised by prudent licensed engineers and contractors utilizing Good Engineering and Construction Practices in relation to development, planning, program management, procurement, design, construction, and contract administration for a Capital Improvement Projects or Projects of similar size, scope, quality, and complexity within the State of California.

**2.4 Licensing.** Contractor and its engineers, consultants, and subcontractors (inclusive of all tiers) must all possess the appropriate California state licenses for their particular design or construction discipline. Nothing in the MSA or CWA will require Contractor or any other Project Team Member to perform any portion of the Work or Services outside of their respective licenses or contrary to the laws, codes, or regulations of the State of California.

### **3. MASTER SERVICE AGREEMENT AND CONTRACT WORK AUTHORIZATION PROCESS**

**3.1 Process.** An executed MSA establishes the base terms and conditions under which Contractor may provide Services or Work on an as-needed basis to PG&E. The MSA does not authorize or guarantee award of any Services or Work, and it is mutually acknowledged that no funds have been committed or will be paid by PG&E upon execution of the MSA. Services and Work will only be authorized by PG&E through an executed CWA. Once the CWA has been executed by both Parties, Contractor agrees to perform all Services or Work as more specifically described in the CWA in accordance with the MSA and applicable CWA.

**3.2 Precedence.** The MSA (inclusive of all Attachments) and CWA (inclusive of all Exhibits) including all Construction Documents, Schedules, and any subsequent Change Orders or Amendments form the basis of the contract between the Parties ("Contract Documents"). The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work or Services by Contractor. The Contract Documents are complementary and are intended to be consistent with each other. What is required by one will

be as binding as if required by all. In the case of discrepancy or ambiguity in the Contract Documents, the following order of precedence will prevail:

- 3.2.1 The most recent Amendment or Change Order.
- 3.2.2 The CWA.
- 3.2.3 The MSA.
- 3.2.4 Special Conditions to the MSA.
- 3.2.5 General Conditions to the MSA.
- 3.2.6 Specifications.
- 3.2.7 BIM (if applicable).
- 3.2.8 Drawings.
- 3.2.9 Written numbers over figures, unless obviously incorrect.
- 3.2.10 Figured dimensions over scaled dimensions.
- 3.2.11 Large-scale Drawings over small-scale Drawings.
- 3.2.12 Specific details over standard or typical details.

If a conflict exists between the terms set forth in the Contract Documents or any Applicable Law, the Applicable Law will control. Varying degrees of stringency among the Contract Document terms and conditions and Applicable Law are not deemed conflicts, and the most stringent requirement will govern.

**3.3 Non-Exclusive Contracts.** The Parties agree that neither the MSA nor any CWA establishes an exclusive contract between PG&E and Contractor for Work or Services and PG&E, in its sole discretion, may award portions of Services or Work related to a Capital Improvement Project or Projects to other entities. By execution of a MSA, PG&E is not guaranteeing the volume of Work or Services. PG&E expressly reserves all its rights, including but not limited to the following: the right to utilize others to perform or supply Work, materials or Services of the type contemplated under the MSA, the right to request proposals from other entities with or without requesting proposal(s) from Contractor for the type of Services or Work contemplated under the MSA, and the unrestricted right by PG&E to bid or perform any such Work or Service.

**3.4 Term of MSA.** The term of any MSA will be enforceable from the Effective Date and will remain in force for period of 5 years, unless terminated under the termination provisions set forth in Article 28 or if a CWA issued under the MSA has a completion date beyond the expiration of the MSA, in which case the MSA will remain in full force and effect until the expiration of the CWA or until all obligations required under the Contract Documents have been performed by Contractor or have expired (e.g., warranty obligations) under the CWA, whichever is later.

**3.5 The CWA.** Once the Work or Services have been defined and a proposal has been approved by PG&E, the detailed scope of Work or Services, deliverables, Schedule requirements, Contract Time, Contract Price, and any other project specific information will be described in a CWA. The CWA will be issued by PG&E's administrative interface to Contractor for acceptance. Multiple Capital Improvement Projects may be aggregated into a single CWA by PG&E. The terms and conditions of the MSA (including all Attachments), will apply independently to each CWA. The issuance of a CWA will not commit PG&E to any future Work or Service by Contractor. Contractor will not start any Work or Service or mobilize equipment and personnel to the site without an executed CWA and issuance of a written notice to proceed. Contractor acknowledges that all costs for Work or Services performed by Contractor without an executed CWA will be at Contractor's sole risk and expense.

#### **4. OBLIGATIONS AND DELIVERABLES BY PROJECT PHASE**

**4.1 Development Phase.** If providing the development portion of the Services under the CWA, Contractor will timely complete and provide PG&E with the deliverables and services set forth in Sections 4.1.1 through 4.1.6, and as may be more particularly defined in the CWA.

4.1.1 Visit the site(s) and conduct preliminary evaluation of the site(s), inventory of relevant assets at the site, and conduct relevant preliminary testing, and provide a professional opinion as to whether the site selected is suitable for the intended development. If Contractor is unable to provide an opinion, Contractor will identify additional data that is required in order to form an opinion, and will assist PG&E in procuring such data.

4.1.2 Identify any barriers or hurdles to overcome in development of the site including environmental impact reports, geotechnical issues, feasibility studies, CEQA issues, real estate rights or interest to be acquired, or other related issues for development of the proposed Capital Improvement Project or Projects.

4.1.3 Identification of necessary governmental approvals, entitlements, consents, required permits.

4.1.4 Prepare a comprehensive development plan and a critical path schedule that integrates all development and planning activities for the proposed Capital Improvement Project or Projects.

4.1.5 Prepare management plans for proposed Projects or a proposed Capital Improvement Project (including preliminary schedules, budgets, work plans and scope).

4.1.6 Develop necessary programming documentation and criteria with the assistance and input from PG&E and other applicable Project Team Members to come up with an Agreed Program for each proposed Capital Improvement Project.

**4.2 Planning Phase.** If providing the development portion of the Services under the CWA, and upon PG&E's approval of the Agreed Program, Contractor will timely complete the deliverables and services set forth in Section 4.2.1 through 4.2.4 and as may be more particularly defined in the CWA.

4.2.1 Develop, refine, and organize the materials gathered during the development phase into alternative preliminary planning schemes, one or more of which PG&E will select for required regulatory approvals, and further development based on the Agreed

Program. The scheme selected by PG&E will be developed through preliminary facility and site plans, studies, and sketches into a master plan that accurately expresses the overall function and purpose of the Capital Improvement Project or Projects, and demonstrate that the master plan can be accomplished within PG&E's Budget, and meets PG&E's space, facility and functional requirements, regulatory requirements, and use limitations that control development. The master plan must reflect the efficient utilization of the site and any salvaged facility and equipment as agreed by PG&E, properly locate all structures on the site as agreed by PG&E, develop design criteria for facilities and utilities identified in the Agreed Program, and meets applicable Governmental Authority restrictions and requirements. The approved master plan will serve as the basis for development of the detailed engineering and design.

4.2.2 Acquire real property interests in the name of PG&E, if applicable.

4.2.3 Preparation of an overall design and construction strategy.

4.2.4 Preparation of more detailed budgets and schedules and validation that the master plan will achieve PG&E's goals articulated in the Agreed Program and can be accomplished within PG&E's Budget.

**4.3 Project Management For Capital Improvement Project or Projects.** If providing the project management portion of the Services under the CWA, and upon PG&E's approval of the master plan, Contractor will timely complete the deliverables and services set forth in Sections 4.4 through 4.10, and as may be more particularly defined in the CWA.

**4.4 Procurement Engineering and Construction Phase.** Contractor will assist PG&E with the procurement of all design and construction services related to a Capital Improvement Project or Projects by completing the following tasks:

4.4.1 Identify proposed engineers and contractors for performance of the Work and develop interest among engineers, designers, and subcontractors (inclusive of all tiers) in the proposed Capital Improvement Project or Projects;

4.4.2 Establish bidding schedules, develop scopes for engineering services or construction work, and prepare and issue bid documents to prequalified, interested companies.

4.4.3 Collaborate with PG&E regarding evaluation of bidder prequalification and bid analysis to determine the best engineers, contractors, subcontractors, and suppliers suited for performance of the Work.

4.4.4 Negotiate contracts with engineers, contractors, subcontractors, and suppliers and either assist PG&E with direct engagement of such entities for performance of the Work or, if directed to do so by PG&E under the CWA, contract directly with engineers, subcontractors and suppliers per Section 2.2. To the extent that Contractor subcontracts for portions of the Work, at a minimum, the following provisions must be specifically passed through in all subcontracts and consulting agreements:

(a) liability, indemnification, and defense provisions similar to Article 10 specifically indemnifying Contractor and PG&E.

(b) insurance and additional insured requirements specifically naming Contractor and PG&E as additional insureds on all policies other than design errors and omissions policies.

(c) dispute resolution process per Article 27.

(d) assignment provisions allowing for assignment of subcontracts and consulting agreements to PG&E if Contractor is terminated under Article 28 provided that PG&E requests and accepts assignment.

(e) PG&E's third party beneficiary status on all engineering and design consulting agreements.

(f) payment provisions that are coordinated with Article 8, contain similar requirements for retention, payment and withholding, and specifically include the audit provisions per Section 8.10.

(g) intellectual property rights per Article 26.

(h) safety obligations per Article 5.

(i) similar provisions to Articles 17 through 29.

**4.5 Development of Design.** Contractor will actively engage and collaborate with other necessary Project Team members in the following activities throughout the entire design process and at various stages in the development of the Construction Documents.

4.5.1 Building Information Model. Contractor will establish a BIM execution plan per Article 16. The Model will be developed in accordance with the BIM execution plan and will be continually updated throughout the design and construction process so that the Model is current with the actual "as-built" condition, and when completed will be the Record Model. To the extent that there are inconsistencies between the 2D plans and the Model, the Model will govern.

4.5.2 2-D Working Drawings. Contractor will also produce working Drawings throughout the various stages in the development of the Construction Documents.

4.5.3 Target Value Design. Contractor will actively engage with other Project Team Members in the Target Value Design process to provide optimal value and design during each stage of the design process, and to properly coordinate and integrate the various equipment, systems and components to increase ease of construction while controlling cost and schedule. Set Based Design and Choosing By Advantages (as defined in Sections 15.7.1 and 15.7.2) may be used to explore design alternatives and reach decisions during the design process. Cost evaluation during the Target Value Design process should include life cycle cost analysis for systems and equipment being considered, design details as they are being developed, and portions of the construction work that PG&E deems necessary for accurate cost modeling.

4.5.4 Preliminary Evaluation. Contractor will cause engineers to provide a preliminary evaluation to PG&E regarding the design and performance criteria and discuss alternative approaches to design and construction taking into account the Budget, value

engineering proposals, lifecycle analysis, and sustainability goals. Proposals for alternative systems, means, methods, finishes, equipment, and the like must satisfy the design and performance criteria and meet the Agreed Program requirements, and result in savings of time or money in constructing, increased sustainability, or improved facilities, operations or maintenance. The Engineer of Record will review all proposals to ascertain design feasibility, satisfaction of the Agreed Program and design concepts, compatibility and compliance with Applicable Laws and code requirements. Contractor and relevant subcontractors will review alternative proposals for constructability, schedule, and cost. PG&E will rely solely on the Contractor's representations about the appropriateness and adequacy for implementation a Capital Improvement Project but proposals on design alternatives will not be incorporated into the Construction Documents without approval of PG&E and the Engineer of Record.

**4.5.5 Cost Evaluation.** Contractor and its subcontractors will provide continual estimating services as often as necessary to support decisions regarding scope, functionality, and design and to help ensure that overall design meets or exceeds the Agreed Program. Consistent cost evaluation will assist Contractor, Engineer of Record, and PG&E in making decisions on design alternatives. If any estimate exceeds previously approved estimates, the Contractor will collaborate with PG&E and other Project Team Members in an effort to reduce the anticipated cost of the Capital Improvement Project. Written approval from PG&E's authorized representative of the cost estimate format and structure is required.

**4.5.6 Life Cycle Analysis.** Contractor will provide alternative equipment and systems to the PG&E for life cycle cost analysis and evaluation of the significant costs of PG&E over the life of each alternative. The analysis will include projected initial cost of the equipment and system, projected yearly operational and maintenance costs, projected life expectancy, estimated replacement cost, and anticipated levels of performance.

**4.5.7 Sustainability Goals.** Contractor will collaborate with the other Project Team Members early during the design process to determine how to achieve any sustainability goals identified in the Agreed Program.

**4.6 Schematic Design Documents.** Upon written receipt of a notice to proceed from PG&E, Contractor will cause the Engineer of Record to prepare Schematic Design Documents based on the Agreed Program. Schematic Design Documents will consist of Drawings, outline Specifications and other necessary documents illustrating the scale and relationship of facility equipment and components and will include a site plan, preliminary layout, sections and elevations for major equipment and systems, as well as line diagrams and proposed equipment schedules based on the design and performance criteria and Agreed Program.

**4.6.1 Reconciliation with Agreed Program and Budget.** Before completing the schematic design documents, Contractor will cause the Engineer of Record to evaluate the programmatic requirements and note any discrepancies between design and performance requirements criteria and the schematic design documents, and request approval and direction from PG&E. Contractor will also prepare an updated cost estimate based on the schematic design documents and will note any slippage in the Schedule. The updated estimate will be compared to the Budget as part of the reconciliation process and submitted to PG&E as part of the approval process. To the extent that there has been a slippage in the Schedule, Contractor will prepare and submit a detailed recovery plans required by Section 7.6 as part of the reconciliation.

**4.6.2 PG&E's Approval Process.** Contractor will submit and present the schematic design documents as well as a narrative describing how the design will meet the Agreed Program and design and performance criteria with respect to fitness for its intended purpose and use, and the updated cost estimate and Schedule. If PG&E does not approve the schematic design documents, or aspects of the documents, the Engineer of Record will modify the schematic design documents and re-submit for approval.

**4.7 Design Development Documents.** Upon approval of the schematic design documents, Contractor will cause the Engineer of Record to prepare design development documents based on the approved schematic design and any approved adjustments authorized by PG&E. The design development documents must include 60% detailed Drawings, Specifications, and narratives necessary to fix and describe the size and character of the entire Capital Improvement Project or Projects as to design; structural, mechanical, and electrical systems; materials; and such other elements as may be appropriate to allow PG&E to initiate scope compliance review(s).

**4.7.1 Reconciliation with Schematic Design Documents and Budget.** Before completing the design development documents, Contractor will cause the Engineer of Record to evaluate the programmatic requirements and note any discrepancies between design and performance requirements criteria and the design development documents, and request approval and direction from PG&E. Contractor will also prepare an updated cost estimate based on the design development documents and will note any slippage in the Schedule. The updated estimate will be compared to the Budget as part of the reconciliation process and submitted to PG&E as part of the approval process. To the extent that there has been a slippage in the Schedule, Contractor will prepare and submit a detailed recovery plans required by Section 7.6 as part of the reconciliation.

**4.7.2 Peer Review.** Contractor will cause the Engineer of Record to prepare the necessary documentation for design review from PG&E and the necessary Governmental Authorities, and to attend all design review meetings as required to obtain approval.

**4.7.3 PG&E's Approval Process.** After peer review, the Engineer of Record will make any necessary revisions or adjustments and then Contractor will submit and present the design development documents to PG&E for approval along with an updated cost estimate and Schedule. If PG&E does not approve the design development documents, or aspects of the documents, the Engineer of Record will modify the design development documents and re-submit for approval.

**4.8 Construction Documents.** Upon approval of the design development documents, Contractor will cause the Engineer of Record to prepare Construction Documents based on the approved design development documents and any approved adjustments authorized by PG&E. The Construction Documents will consist of final Drawings and Specifications setting forth in detail all necessary requirements for proper construction of the Capital Improvement Project or Projects. The Construction Documents will describe the quality, configuration, size, functionality, performance, and relationships of all materials, equipment, and components to be incorporated into the Capital Improvement Project or Projects.

**4.8.1 Peer Review.** The Engineer of Record will submit Construction Documents for back check and compliance review to PG&E, as well as submission to the necessary Governmental Authorities for which approval is required. The Engineer of Record

will continue to re-submit the documents until written approval is obtained from PG&E and the necessary Governmental Authorities.

**4.8.2 Reconciliation.** Before completing the 100% Construction Documents, the Engineer of Record and Contractor will evaluate the programmatic requirements and note any discrepancies between the design and performance criteria and Agreed Program and the Construction Documents (that have not been previously noted), and request approval and direction from PG&E. Contractor and its subcontractors will also prepare an updated cost estimate based on the Construction Documents demonstrating that the construction work can be completed within the approved Budget, and will note any slippage in the Schedule. To the extent that there has been slippage in the Schedule, Contractor will prepare and submit a detailed recovery plan as required under Section 7.6 as part of the reconciliation.

**4.8.3 Submission of Signed and Stamped Construction Documents.** In order to obtain necessary permits and to comply with professional registration statutes, 2D Drawings, calculations and Specifications must be generated, reviewed, sealed, and submitted to reviewing Governmental Authorities. The Engineer of Record will sign and stamp the Drawings, Specifications, and calculations. By signing and sealing the Construction Documents, the Engineer of Record warrants that the design portion of the Services are complete, coordinated, accurate, and contain directions that will enable construction of the Capital Improvement Project or Projects.

**4.8.4 Permits and Approvals.** Contractor will submit all documentation required for permit and assist PG&E in obtaining a permit for construction.

**4.8.5 Substitutions.** Once the Construction Documents are approved by the Governmental Authorities and PG&E no substitutions will be allowed unless: (i) the specified materials or equipment have been discontinued; or (ii) the PG&E has approved the substitution, in writing, after receiving advise from the Engineer of Record. The Engineer of Record and PG&E will review all substitutions requests properly submitted for overall conformance with the design intent expressed in the Construction Documents. Only substitutions approved by PG&E will be incorporated into the Construction Documents. Substitutions that are included in the Work but not approved will be deemed non-conforming construction work and subject to correction per Article 17.

#### **4.9 Capital Improvement Contract Administration Phase**

**4.9.1 Supervision.** Contractor will provide a qualified superintendent at the site to properly supervise and direct all employees, subcontractors (inclusive of all tiers) and their agents and employees, and other persons performing any construction work at the site, and to ensure that the construction work is carried out in accordance with the Contract Documents. The superintendent must be able to read, write, and verbally communicate in English. The superintendent may not be removed from, or added to, the Capital Improvement Project without prior written consent from PG&E except for death, disability, or departure from employment. If a replacement is necessary, the proposed superintendent will have equal or better qualifications than the former superintendent, and all candidates are subject to final approval by PG&E.

**4.9.2 Discipline.** Contractor will at all times enforce strict discipline and good order among its employees and will not employ any unfit or unskilled persons or entities on the Capital Improvement Project. Contractor and its design professionals (if any) and

subcontractors (inclusive of all tiers) will comply with all PG&E policies and procedures throughout the duration of the Capital Improvement Project.

**4.9.3 Coordination of Construction Work.** Before starting each portion of the construction work, the Contractor will: (i) review and compare the various Contract Documents relative to that portion of the construction work, as well as the information furnished by the other Project Team Members that may affect proper installation; (ii) field measure existing conditions related to that portion of the construction work; and (iii) observe any conditions at the site directly affecting that portion of the construction work.

(a) **Field Engineering.** The Contractor will establish all required reference points and benchmarks at the site, and if a building is constructed as part of the Capital Improvement Project, establish building lines and elevations, check for building framing plumbness, and establish on building frame the required basic grid lines. The Contractor will locate and protect control points before commencing the construction work, and preserve permanent reference points during construction. The Contractor will be responsible for replacing any control points that are lost or destroyed.

(b) **Utilities.** The Contractor will verify the location and depth (elevation) of all existing utilities and services before performing any excavation at the job site.

(c) **Coordination of MEP.** Mechanical, electrical, plumbing, fire protection, and fire and life safety work will be coordinated through the BIM, as appropriate, to avoid obstructions, preserve head room, keep openings and other passageways clear, overcome interference with structural, framing, and equipment conditions, and coordinate with other trades.

(d) **Fixtures, Furnishings and, Equipment.** The Contractor will timely procure all fixtures, furnishings, and equipment in a manner consistent with the deadlines and requirements established by PG&E and set forth in the most current, approved Schedule.

(e) **Maintenance of Records.** The Contractor will maintain at the site for PG&E one record copy of the Agreed Program, the Construction Documents, the approved design development documents, all permits and permit drawings, the BIM, all addenda, approved Submittals, Change Orders and other modifications, and RFIs in good order and marked currently to record changes and selections made during design and construction. The Contractor will maintain records in duplicate, to the extent applicable, of principal building layout lines, elevations of the bottom of footings, floor levels, and key site elevations certified by a qualified surveyor or professional engineer. All records will be available in the Contractor's jobsite office and will be delivered to PG&E before Final Completion along with any other required close-out documentation required by the Contract Documents.

**4.9.4 Submittals.** Subcontractors will timely submit all Submittals required by the Contract Documents to the Contractor for coordination and review prior to submitting them to the design professional who is responsible for that specific design discipline (with a copy to the Engineer of Record), and in accordance with the most current, approved Submittal schedule avoiding delays in the Work or in the activities of other Project Team Members performing work or services. Each Submittal will be prepared by the responsible subcontractor (inclusive of all tiers) or supplier in accordance with the Contract Documents to demonstrate the construction means and methods proposed for installation of systems or components in a coordinated manner with other contiguous work and consistent with the design expressed in the

Construction Documents. Contractor will not submit any shop drawing that is merely a tracing or copy of any of the Construction Documents. Each Submittal will be prepared by the responsible subcontractor (inclusive of all tiers) or supplier in accordance with the Contract Documents. Any submittals that are not required by the Contract Documents may be returned by the appropriate design professional without action.

(a) Submittal Scheduling. The Contractor will provide a schedule that complies with PG&E's milestone requirements and indicates when submittals will be issued and when approval must be received to allow for proper procurement of materials and equipment and to avoid delays in the Work. Disputes regarding the submittal schedule will be resolved in accordance with the dispute resolution procedures in Article 27.

(b) Review. The Engineer of Record and other appropriate design professionals will review the Submittals for conformance with the Construction Documents or design and performance Criteria (for design-build trade work, if any), and approve or take other appropriate action. PG&E may also review Submittals, and PG&E reserves the right to have peer review. However, regardless of the review process, the Contractor will remain responsible for all of its design services and approval of a Submittal does not relieve the Contractor or submitter from any of its contractual obligations. If any Submittal is returned without approval, the rejecting party will discuss with the submitting party the reason for rejection and describe the necessary modifications. The Contractor will require its subcontractor (inclusive of all tiers) or supplier to make the necessary corrections and furnish corrected resubmissions to the Engineer of Record and other appropriate design professionals within 1 week or less, for approval. No Construction Work will be performed for which the Contract Documents require a Submittal until the respective Submittal has been approved. All approved Submittals must be posted on the Project's portal, and available in the Project office.

(c) Design-Build Subcontractors. Submittals prepared by design-build subcontractors must be prepared by, or under the responsible charge of, a professional engineer or architect registered or licensed in accordance with Applicable Law who will sign and seal all design-build Submittals indicating that the design professional is the engineer or architect of record. Submittals will be in accordance with the provisions set forth in Section 4.9.4. Design-build subcontractors will remain liable and responsible for all design-build Submittals. The Engineer of Record and other design professionals will review design-build Submittals to confirm that the Submittals are in general conformance with the design criteria and Construction Documents, and to coordinate the design-build Submittals with the design prepared by other design professionals.

4.9.5 Site Logistics. The Contractor, in collaboration with the PG&E representative identified in the CWA, will develop a site logistics plan for PG&E approval. The site logistics plan will identify areas of the site that will be used for trailers, deliveries, staging, ingress, egress, etc. The site logistics plan will be incorporated as an Exhibit to the CWA.

4.9.6 Layout and Protection. The Contractor is responsible for all layouts and will preserve and protect all line and grade benchmarks. Any additional surveying or layout caused as a result of Contractor or any of its subcontractors (inclusive of all tiers)' failure to take the necessary precautions to protect the data will be performed at Contractor's own cost and expense.

4.9.7 Materials and Equipment. Storage of equipment and materials will be coordinated through the PG&E representative identified in the CWA. Contractor will maintain, or